MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The general weather conditions which prevailed over the United States and Canada during September, 1883, are presented in this REVIEW, based upon reports received from the regular stations of the Signal Service, from the Canadian Meteorological Service, and from co-operating state weather services and voluntary observers.

The mean temperature of the month has been generally below the average in all districts east of the Rocky mountains, the greatest departures occurring from the Missouri valley eastward to the lower lake region. On the Pacific coast the mean temperature has been above the normal.

The monthly rainfall has been less than the average for September in nearly all parts of the country, the deficiencies being greatest in the east Gulf states.

Owing to the small monthly precipitation over most of the country, drought prevailed to a great extent; and in many localities forest fires burned over large tracts of land, causing the destruction of much property, especially in the New England states.

On chart v. are shown the limits within which frosts occurred during the month.

The storm traced as number iv. on chart i., was a tropical hurricane which moved slowly northwestward over the West Indies, to the North Carolina coast, between the 5th and 10th. This storm, which was very disastrous to shipping, is fully described under "areas of low barometer."

The small number of reports from vessels encountering icebergs during September indicates that the north Atlantic ocean is comparatively free of ice. Chart ii., therefore, which heretofore has shown the limits of ocean ice, shows only the approximate paths of the storms occurring in the north Atlantic.

In the preparation of this REVIEW the following data, received up to October 20th, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-two Signal Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and forty-six monthly journals, and one hundred and thirty-five monthly means from the former, and fifteen monthly means from the latter; two hundred and forty-seven monthly registers from voluntary observers; fifty-two monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Indiana, Kansas, Nebraska, Ohio, and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean atmospheric pressure for the month of September, 1883, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart iii. A small area of barometric maxima, inclosed by the isobar of 30.1, occupies a part of northern Montana. Two isobars of 30.05 are shown on the chart. The more northerly of these extends in an easterly direction from northeastern Minnesota to Nova Scotia; and the other is traced from the northern boundary of Washington territory southeastward to near the western Gulf coast, thence northeasterly in an irregular line to the lake region, thence southward to northern Georgia, and thence northeastward to the north Carolina coast. The highest barometric means reported are 30.15, from Fort Shaw, Montana, and 30.1 from Fort Buford, Dakota. Within the area between the isobars of 30.05 the mean pressures vary from 30.05 to 30.09. The mean atmospheric pressure has been least in California and southern Arizona; the lowest barometric mean, 29.78, is reported from Yuma, Arizona.

Compared with the mean pressure for August, 1883, there has been a decrease on the Pacific coast varying from .01 to .08; there has also been a very slight decrease in Florida. Along the Gulf and south Atlantic coasts and in the Ohio valley and Tennessee no change has taken place. Elsewhere over the country the mean pressure is greater than that of August, the excess being greatest over the northern and middle slopes, extreme northwest, and in New England and the Canadian maritime provinces. The greatest increase occurred at Cheyenne, Wyoming, where it amounted to .15.

DEPARTURES FROM THE NORMAL VALUES FOR THE MONTH.

The mean atmospheric pressure of September, 1883, compared with the September normal shows a slight deficiency on the Pacific coast (except at Red Bluff, California, where it is .03 above), in Maine, and east of the Mississippi river south of the Ohio valley. The greatest departures below the normal are .05 at Portland, Oregon, and .06 at Louisville, Kentucky. In all other districts the mean pressure is above the normal for September, the departures being greatest from the upper lake region southwestward to Colorado and Wyoming, where they vary from .08 to .10.

BAROMETRIC RANGES.

The monthly barometric ranges have been greatest in New England, the lake region, and on the North Carolina coast in the vicinity of Smithville. The largest monthly range (1.25) is reported from Eastport, Maine. The smallest monthly ranges are reported from California and from stations along the Gulf coast, the minimum, 0.19, occurring at Los Angeles, California.

In the several districts the monthly barometric ranges have varied as follows:

New England.—From 0.98 at Block Island, Rhode Island, to 1.25 at Eastport, Maine.

Middle Atlantic states.—From 0.60 at Norfolk, Virginia, to 1.16 at Albany, New York.

South Atlantic states.—From 0.40 at Atlanta, Georgia, to 0.86 and 1.08 at Wilmington and Smithville, North Carolina, respectively.

Florida peninsula.—From 0.33 at Key West to 0.41 at Sanford.